

AKAI SERVICE MANUAL



FM AM STEREO TUNER

MODEL **AT-K1/L**

ABBREVIATIONS FOR SERVICE MANUAL MODEL AT-K1/L

ABBREVIATION	EXPLANATION
FM	Frequency Modulation
AM	Amplitude Modulation
SW	SWitch
SSG	Standard Signal Generator
AC	Alternating Current
R	Right
L	Left
SENS	SENSitivity
IF	Intermediate Frequency
LW	Long Wave
OSC	OSCillator
ADJ	ADJust
FREQ.	FREQuency
MW	Medium Wave
SM	Signal Meter
RF	Radio Frequency
AF	Audio Frequency
ST	STereo



FM AM STEREO TUNER

MODEL AT-K1/L

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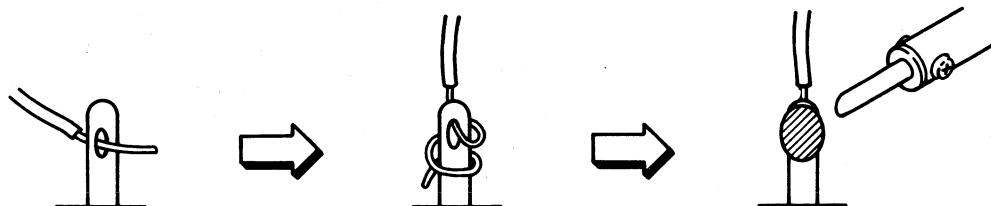
SAFETY INSTRUCTIONS

SAFETY CHECK AFTER SERVICING

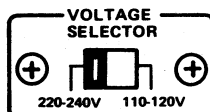
Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for **C** or **A**, specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks, line-in-out jacks etc.)

PRECAUTIONS DURING SERVICING

1. Parts identified by the **Δ** symbol parts are critical for safety.
Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
 - 1) Insulation Tape
 - 2) PVC tubing
 - 3) Spacers (Insulating Barriers)
 - 4) Insulation sheets for transistors
 - 5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.
10. Voltage conversion
Models for Canada, USA, UK and Australia are not equipped with this facility. Each machine is preset at the factory according to destination.
However, if voltage conversion is necessary, it is accomplished as follows:
 - 1) Disconnect the power cord.
 - 2) Set the voltage selector located on the rear panel to the proper position with a screwdriver.



SECTION 1

SERVICE MANUAL

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For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. SPECIFICATIONS

FM TUNER SECTION

TUNING FREQUENCY RANGE	87.5 to 108.0 MHz
SENSITIVITY	USABLE (S/N = 30 dB) 12.7 dBf (Mono, 300 ohms) QUIETING (S/N = 50 dB) 19.2 dBf (Mono) /40.2 dBf (Stereo)
CAPTURE RATIO	2.0 dB
SELECTIVITY (±400 kHz)	60 dB
IMAGE REJECTION	50 dB
IF REJECTION	80 dB
SPURIOUS REJECTION	80 dB
AM SUPPRESSION	50 dB
SUB CARRIER SUPPRESSION	55 dB
S/N (Mono/Stereo)	70/62 dB
T.H.D. (Mono/Stereo)	0.2/0.4%
STEREO SEPARATION	42 dB (1 kHz)
FREQUENCY RESPONSE	30 Hz to 15 kHz ± 1 dB

AM TUNER SECTION (MW for AT-K1L)

TUNING FREQUENCY RANGE	525 to 1,605 kHz
USABLE SENSITIVITY (IHF) LOOP ANTENNA	300 μV/m
SELECTIVITY	30 dB
IMAGE REJECTION	45 dB
IF REJECTION	35 dB
S/N	40 dB
T.H.D.	1.0%

LW TUNER SECTION (AT-K1L only)

TUNING FREQUENCY RANGE	160 to 340 kHz
USABLE SENSITIVITY (IHF) LOOP ANTENNA	800 μV/m
SELECTIVITY	40 dB
IMAGE REJECTION	45 dB
IF REJECTION	35 dB
S/N	35 dB
T.H.D.	2.0%

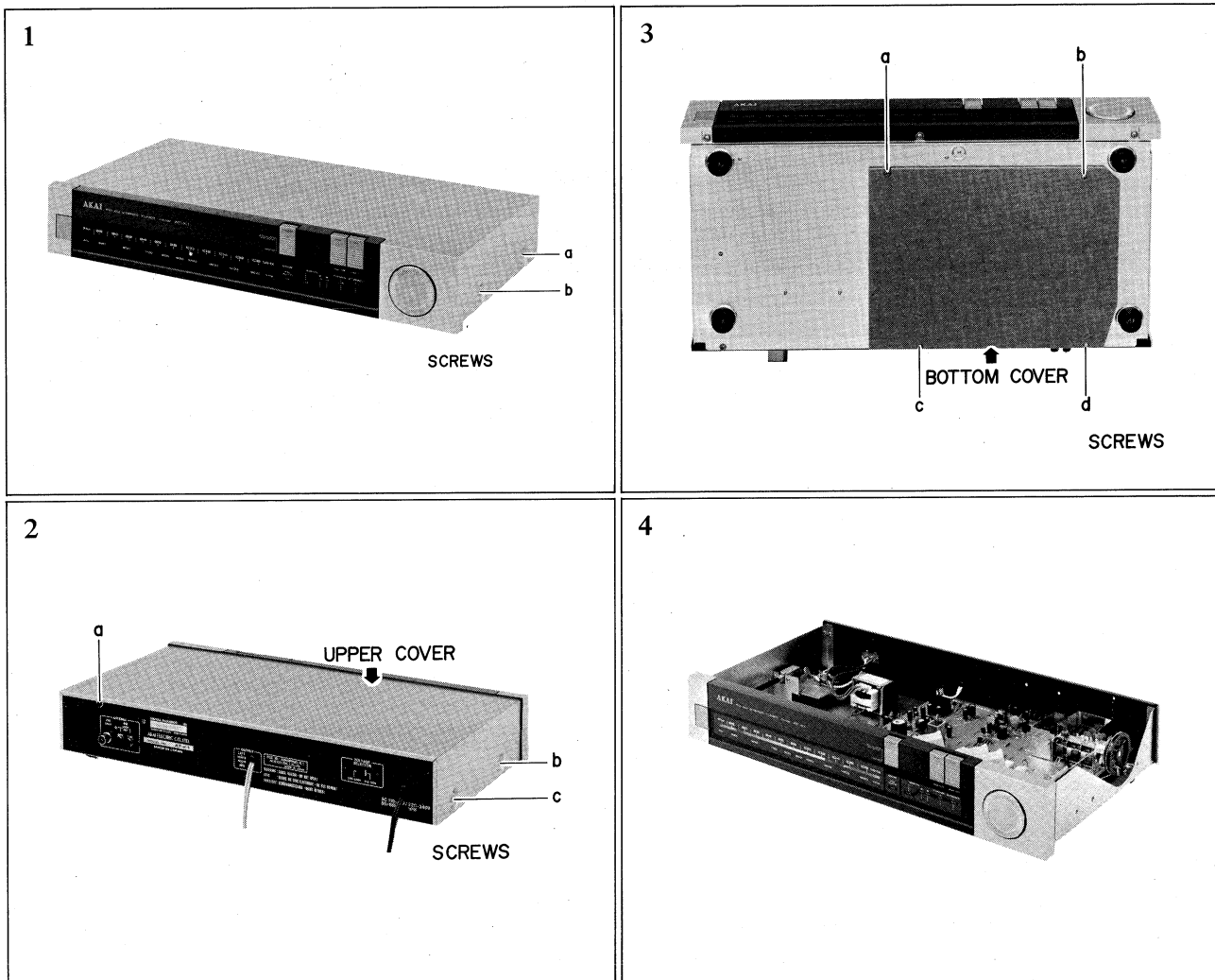
OUTPUT SECTION

OUTPUT VOLTAGE	FM (100% Modulation) 700 mV AM (30% Modulation) 200 mV
POWER REQUIREMENTS	120V, 60 Hz for USA and Canada 220V, 50 Hz for Europe except UK 240V, 50 Hz for UK and Australia 110V–120V/220V–240V, 50/60 Hz switchable for other countries.
POWER CONSUMPTION	U, C, A Models: 10W
DIMENSIONS	440(W) × 78(H) × 248(D) mm (17.3 × 3.0 × 9.8) inches
WEIGHT	2.5 kg (5.5 lbs)

* For improvement purposes, specifications and design are subject to change without notice.

II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.



III. CONTROLS

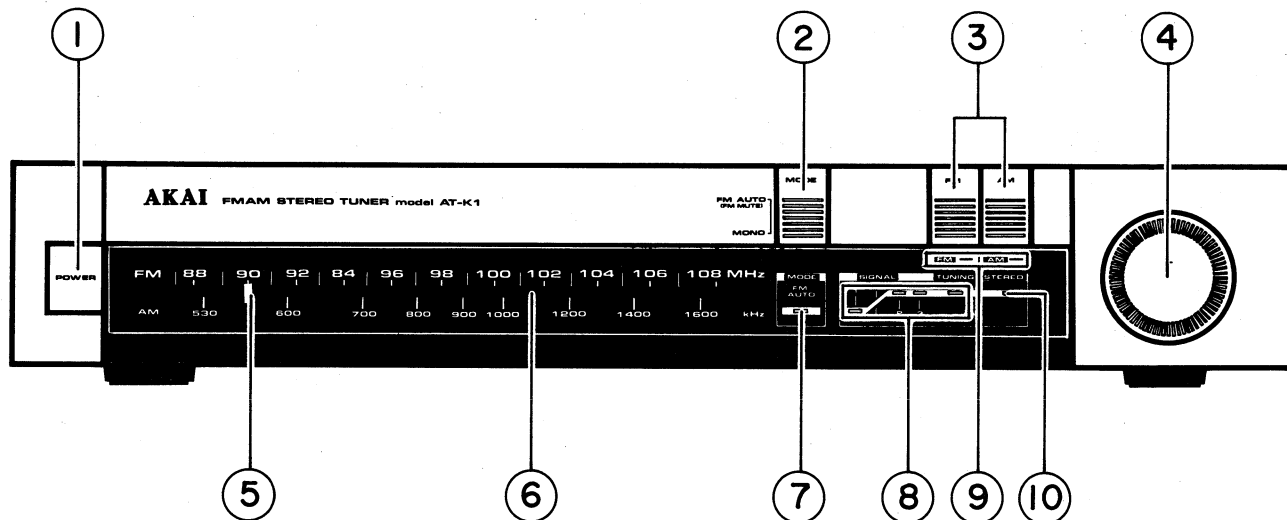


Fig. 3-1

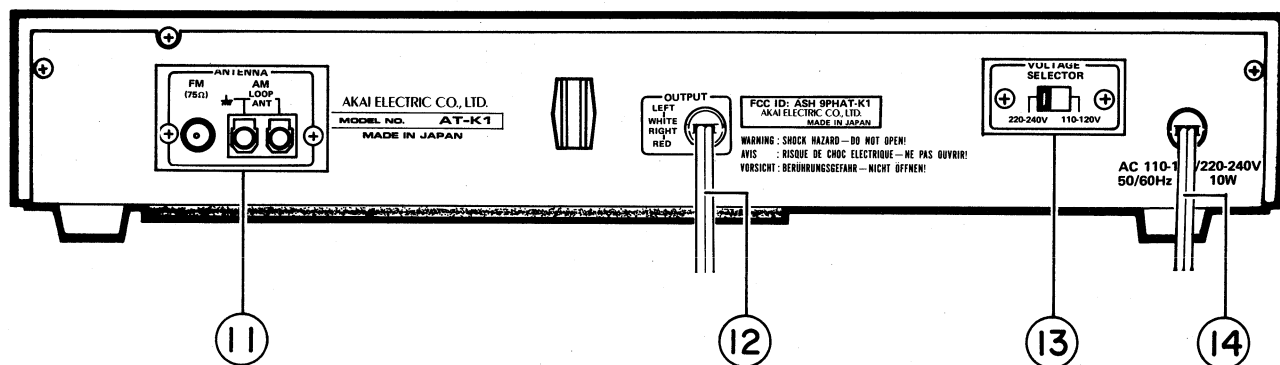


Fig. 3-2

- | | |
|--------------------------|--|
| 1. POWER SWITCH | 8. SIGNAL/TUNING INDICATORS |
| 2. FM MODE SELECTOR | 9. FM/AM BAND INDICATORS |
| 3. BAND SELECTORS | 10. FM STEREO INDICATOR |
| 4. TUNING CONTROL | 11. ANTENNA TERMINALS |
| 5. DIAL POINTER | 12. OUTPUT CORD |
| 6. FM/AM FREQUENCY SCALE | 13. VOLTAGE SELECTOR SWITCH (U model only) |
| 7. FM AUTO INDICATOR | 14. POWER CORD |

IV. PRINCIPAL PARTS LOCATION

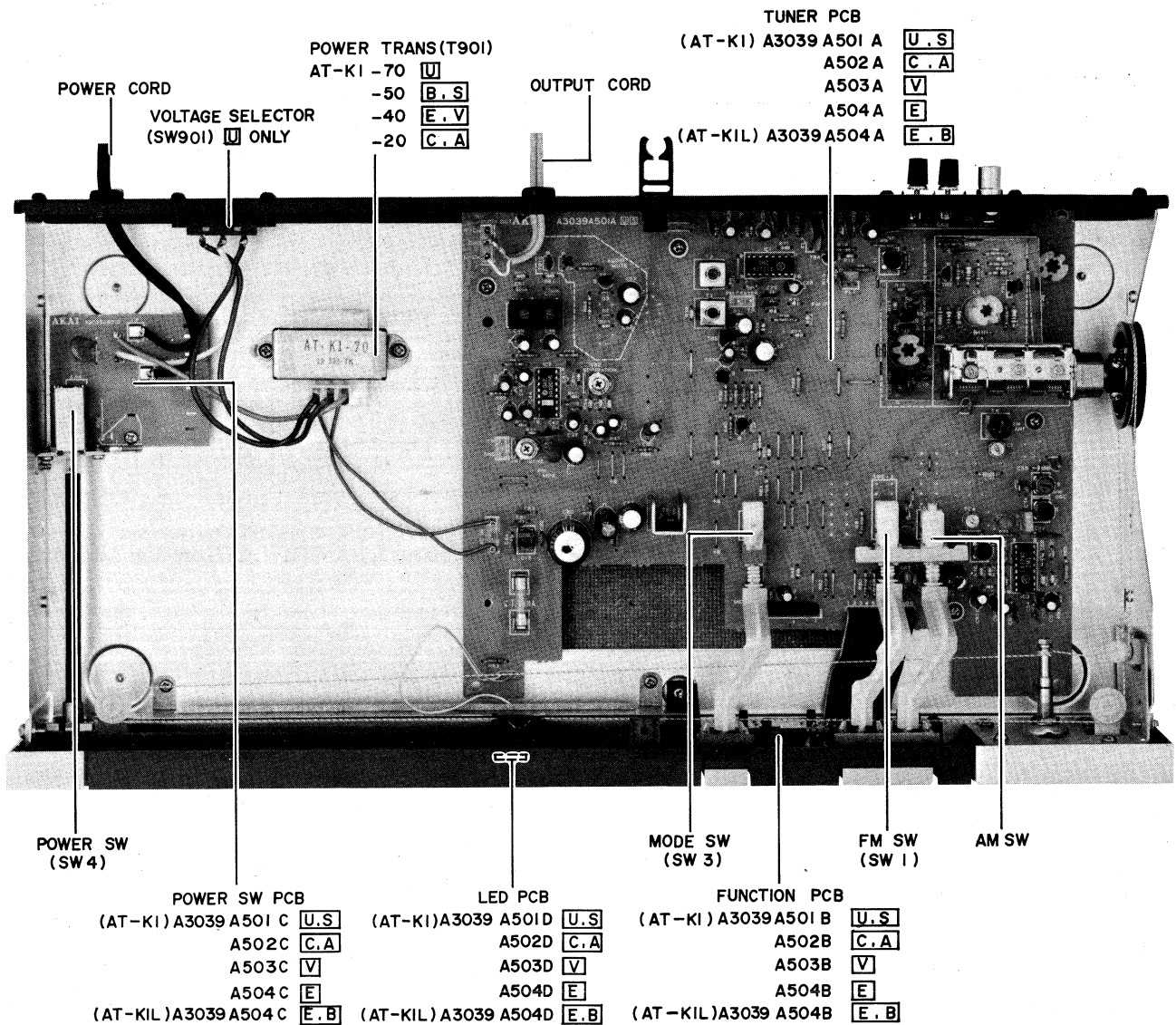


Fig. 4-1 Top View

V. TUNER ADJUSTMENT

5-1 THE INSTRUMENT CONNECTIONS

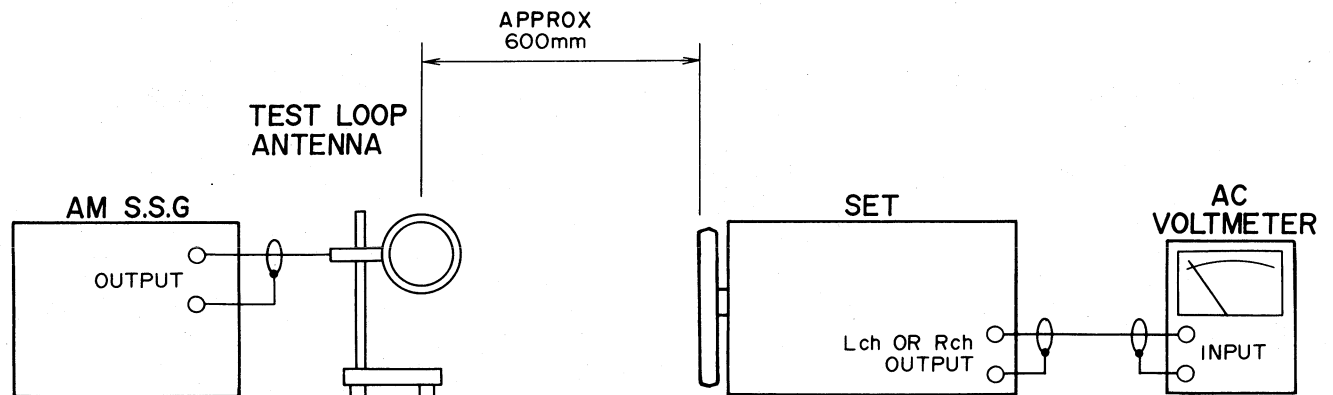


Fig. 5-1 Instrument Connections for AM (MW, LW) Section Adjustment

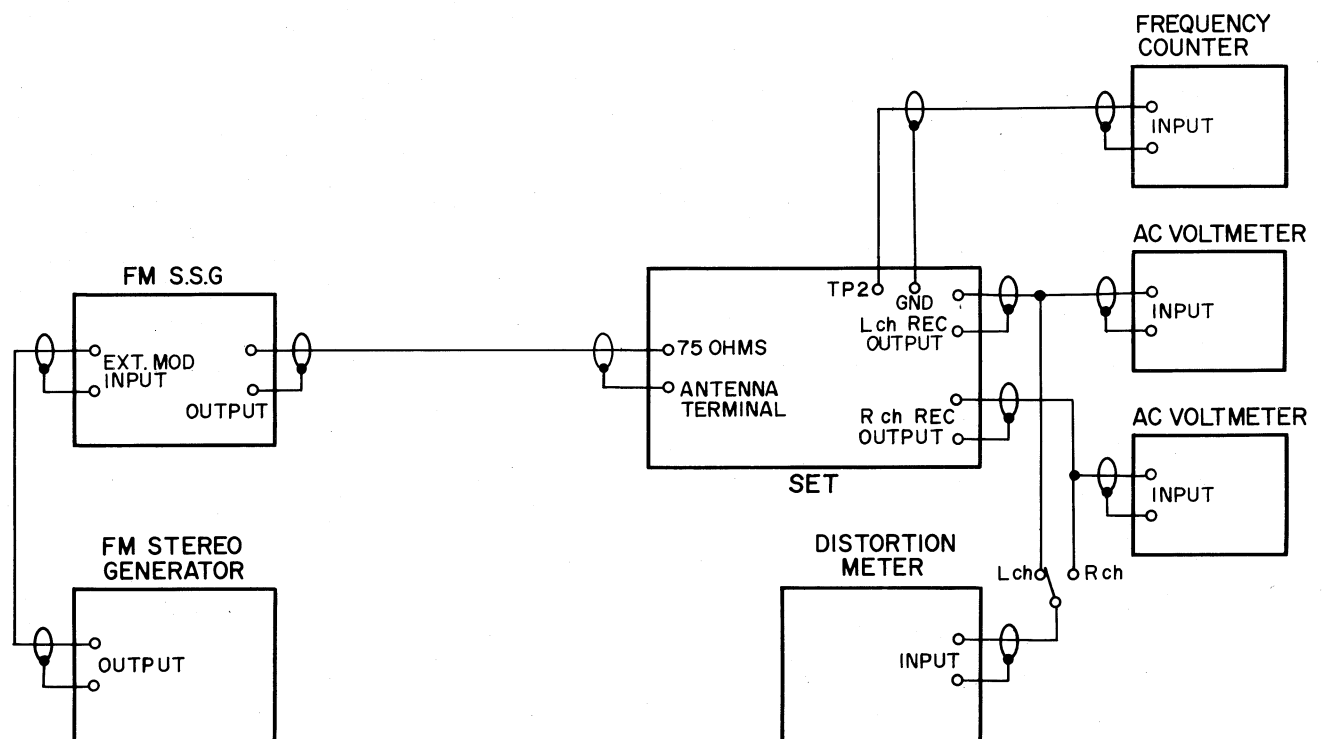


Fig. 5-2 Instrument Connections for FM Section Adjustment

5-2 AT-K1/L TUNER P.C BOARD ADJUSTMENT POINT

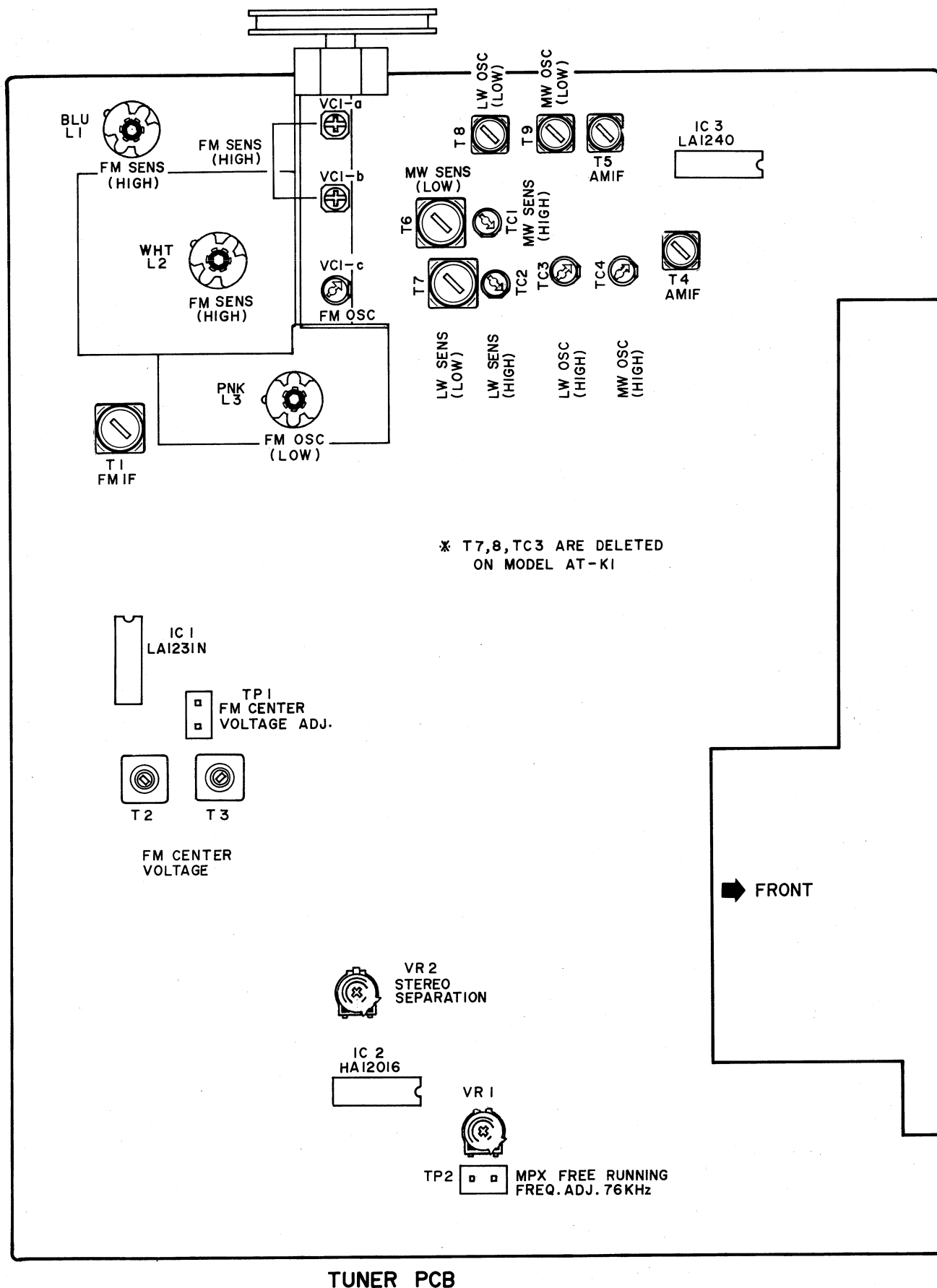


Fig. 5-3

5-3 AM (MW/LW) TUNER SECTION ADJUSTMENT (Refer to Fig. 5-1 & 5-3)

Step	Adjustment Item	Adjustment Point	Result	Remarks
1	LW OSC (Low)	T8	Maximum output	<ul style="list-style-type: none"> • Band SW to LW. • 160 kHz, 50 dB input. • Dial Pointer to 160 kHz.
2	LW OSC (High)	TC3	Maximum output	<ul style="list-style-type: none"> • 340 kHz input. • Dial Pointer to 340 kHz.
3	Repeat Steps 1 & 2.			
4	LW Low Range Sensitivity	T7	Less than 65 dB	<ul style="list-style-type: none"> • 164 kHz input. • Tune the signal (164 kHz). • Less than 10% Distortion Factor.
5	LW High Range Sensitivity	TC2	Less than 65 dB	<ul style="list-style-type: none"> • 299 kHz input. • Tune the signal (299 kHz). • Less than 10% Distortion Factor.
6	Repeat Steps 4 & 5.			
7	MW OSC (Low)	T9	Maximum output	<ul style="list-style-type: none"> • Band SW to AM or MW. • 530 kHz, 50 dB input. • Dial Pointer to 530 kHz.
8	MW OSC (High)	TC4	Maximum output	<ul style="list-style-type: none"> • 1,600 kHz input. • Dial Pointer to 1,600 kHz
9	Repeat Steps 7 & 8.			
10	MW Low Range Sensitivity	T6	Less than 60 dB	<ul style="list-style-type: none"> • 600 kHz input. • Tune the signal (600 kHz). • Less than 10% Distortion Factor.
11	MW High Range Sensitivity	TC1	Less than 60 dB	<ul style="list-style-type: none"> • 1,400 kHz input. • Tune the signal (1,400 kHz). • Less than 10% Distortion Factor.
12	Repeat Steps 10 & 12.			
13	AM IF	T4, T5	Maximum output Minimum Distortion	<ul style="list-style-type: none"> • 1,000 kHz, 60 dB input. • Tune the signal (1,000 kHz).
14	Signal Meter Sensitivity (Confirmation)	NOTE	Signal Indicator LEDs are lit	<ul style="list-style-type: none"> • 1,000 kHz (MW), 74 dB input. • Tune the signal (1,000 kHz).

NOTES: 1. Set the internal modulation signal generator to 30%, 400 Hz of each.
2. Adjustment steps 1 to 6, for model AT-K1L only.

5-4 AT-K1/L FM TUNER SECTION ADJUSTMENT (Refer to Figs. 5-2 & 5-3)

Step	Adjustment Item	Adjustment Point	Result	Remarks
1	FM OSC (Low)	L3	Maximum output	<ul style="list-style-type: none"> • Band SW to FM. • 88 MHz, 60 dB, Mono input. • Dial Pointer to 88 MHz.
2	FM OSC (High)	VC1-c	Maximum output	<ul style="list-style-type: none"> • 108 MHz input. • Dial Pointer to 108 MHz.
3	Repeat Steps 1 & 2.			
4	FM IF	T1	Maximum output	<ul style="list-style-type: none"> • 98 MHz, 60 dB, Mono input. • Dial Pointer to 98 MHz.
5	Low Range Sensitivity	L1, L2	Less than 6 dB	<ul style="list-style-type: none"> • 88 MHz, Mono input. • Tune the signal (88 MHz). • 3% Distortion Factor.
6	High Range Sensitivity	VC1-a VC1-b	Less than 6 dB	<ul style="list-style-type: none"> • 108 MHz input. • Tune the signal (108 MHz). • 3% Distortion Factor.
7	Repeat Steps 1 to 4.			
8	FM Center Voltage	T2, T3	Centered Tuning Meter Indication	<ul style="list-style-type: none"> • Center Tuning Meter across TP1 terminals (See NOTE 1). • Tune only noise without interference from broadcasting.
9	MPX Free Running Frequency	VR1	76 kHz \pm 50 Hz	<ul style="list-style-type: none"> • Mode SW to FM AUTO. • Frequency Counter Across TP2 terminals.
10	Stereo Separation	VR2	More than 35 dB	<ul style="list-style-type: none"> • 98 MHz, 60 dB, Stereo input. • L-CH (R-CH) input. • Tune the signal (98 MHz). • Minimum output of R-CH (L-CH).

- NOTES:**
1. The center tuning meter such as the ones used on models AA-R20, 30, 40, 50 & AT-2400, 2600 can be used for this adjustment. If they are not available, use a digital meter (DC VOLTAGE, RANGE 20V) instead, and adjust T2 & T3 so that it indicates 0V at the same condition.
 2. Set the internal modulation signal generator to 100% (75 kHz div.), 1 kHz of each.

VI. CLASSIFICATION OF VARIOUS P.C BOARDS

6-1 P.C BOARD TITLES AND IDENTIFICATION NUMBERS

MODEL AT-K1

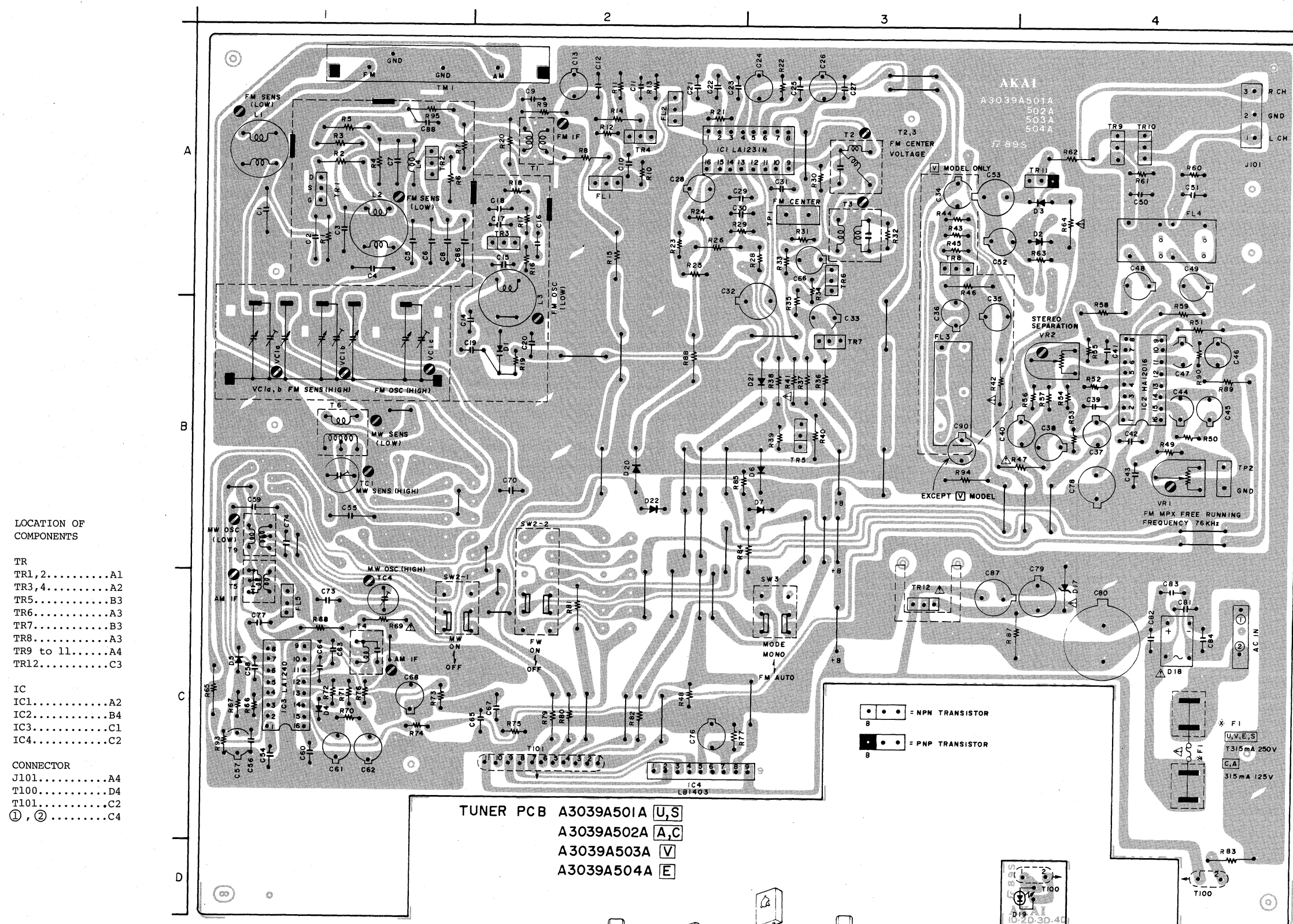
P.C Board Title		P.C Board Number	Remarks
TUNER	P.C BOARD	A3039A501A	U, S
TUNER	P.C BOARD	A3039A502A	C, A
TUNER	P.C BOARD	A3039A503A	V
TUNER	P.C BOARD	A3039A504A	E
FUNCTION	P.C BOARD	A3039A501B	U, S
FUNCTION	P.C BOARD	A3039A502B	C, A
FUNCTION	P.C BOARD	A3039A503B	V
FUNCTION	P.C BOARD	A3039A504B	E
POWER SW	P.C BOARD	A3039A501C	U, S
POWER SW	P.C BOARD	A3039A502C	C, A
POWER SW	P.C BOARD	A3039A503C	V
POWER SW	P.C BOARD	A3039A504C	E
LED	P.C BOARD	A3039A501D	U, S
LED	P.C BOARD	A3039A502D	C, A
LED	P.C BOARD	A3039A503D	V
LED	P.C BOARD	A3039A504D	E

MODEL AT-K1L

P.C Board Title		P.C Board Number	Remarks
TUNER	P.C BOARD	A3039A504A	E, B
FUNCTION	P.C BOARD	A3039A504B	E, B
POWER SW	P.C BOARD	A3039A504C	E, B
LED	P.C BOARD	A3039A504D	E, B

6-2 COMPOSITION OF VARIOUS P.C BOARDS

1) AT-K1 TUNER P.C BOARD A3039A501A U, S, A3039A502A A, C, A3039A503A V, A3039A504A E, LED P.C BOARD A3039A501D U, S, A3039A502D A, C, A3039A503D V, A3039A504D E



2) AT-K1L TUNER P.C BOARD A3039A504A [B, E], LED P.C BOARD A3039A504D [B, E]

LOCATION OF COMPONENTS

TR
TR1,2.....A1
TR3,4.....A2
TR5.....B3
TR6.....A3
TR7.....B3
TR9 to 11.....A4
TR12.....C3

IC
IC1.....A2
IC2.....B4
IC3.....C1
IC4.....C2

CONNECTOR
J101.....A4
T100.....D4
T101.....C2
①, ②.....C4

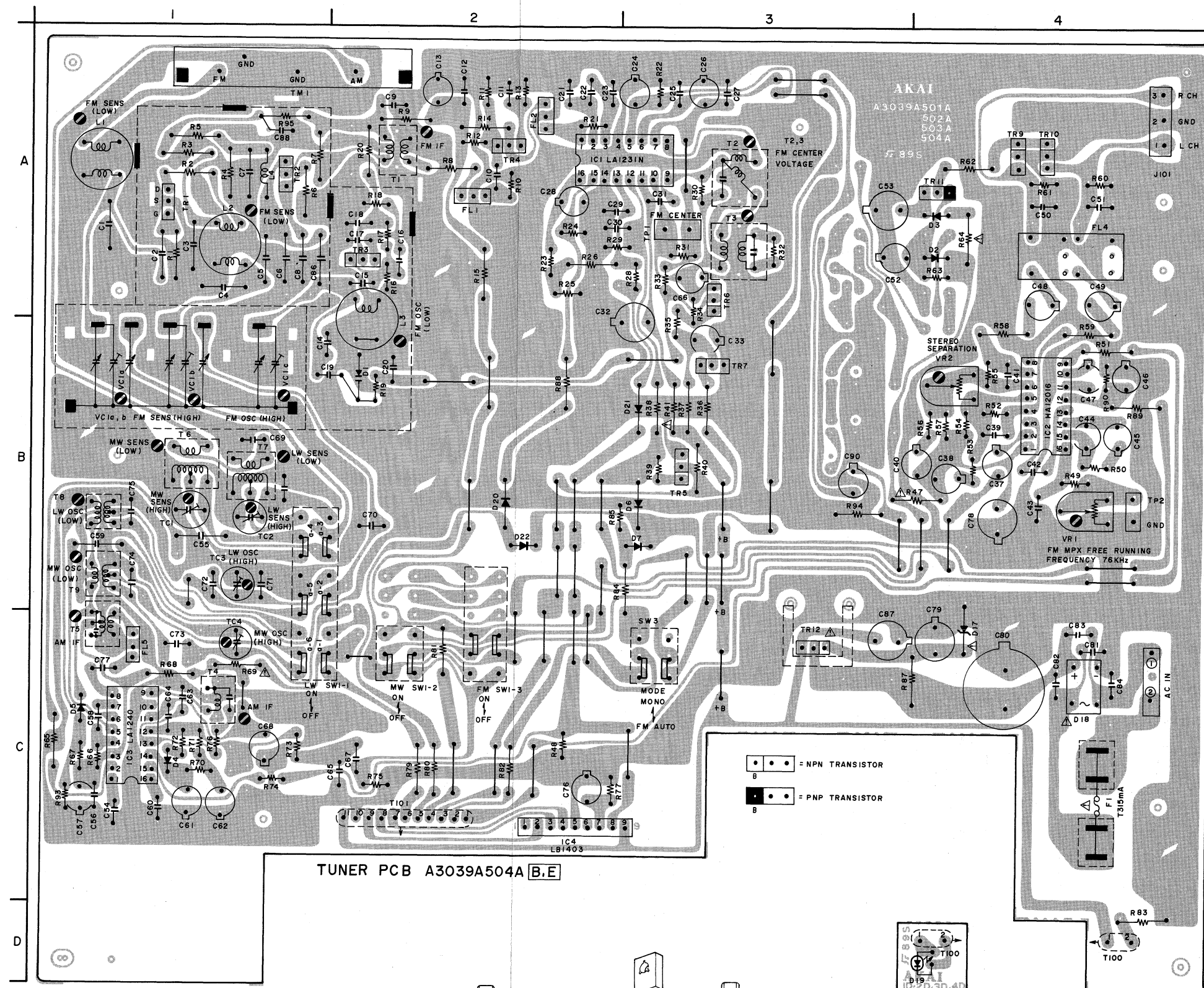
TR1.....2SK61 (Y)
TR2.....2SC2999 (C,D)
TR3,4.....2SC930 (E,F)
TR5 to 7.....2SC536K-NP (E,F,G)
TR9,10.....2SD1012-V (F,G)
TR11.....2SA608K-NP (E,F,G)
TR12.....2SD612K (D,E,F)

WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

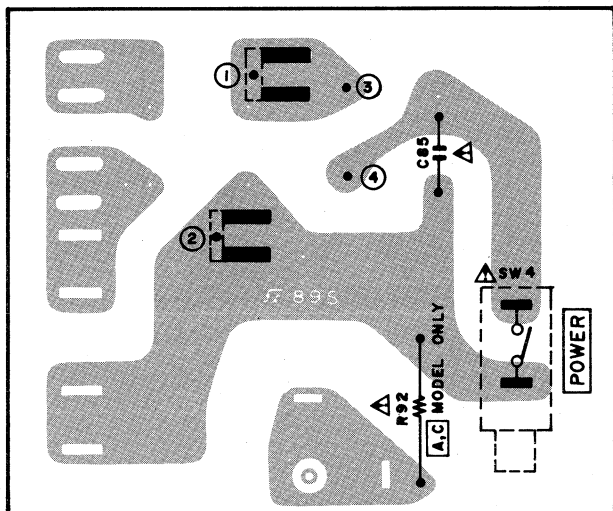
TUNER PCB A3039A504A [B, E]

LED PCB A3039A504D [B, E]

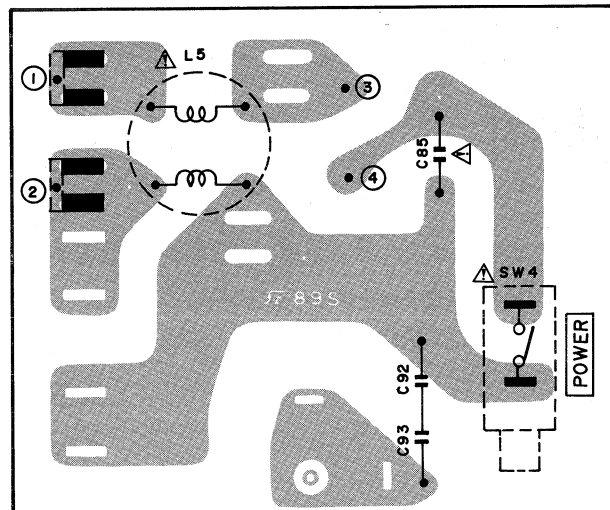
Δ B C E
E C B
E C B
D S G
2SA608K-NP
2SC536K-NP
2SC930
2SC2999
2SD1012-V
2SD612K
2SK61



3) AT-K1 POWER SW P.C BOARD A3039A501C [U, S], A3039A502C [A, C], A3039A504C [E], A3039A503C [V]



POWER SW PCB A3039A501C [U, S]
A3039A502C [A, C]
A3039A504C [E]

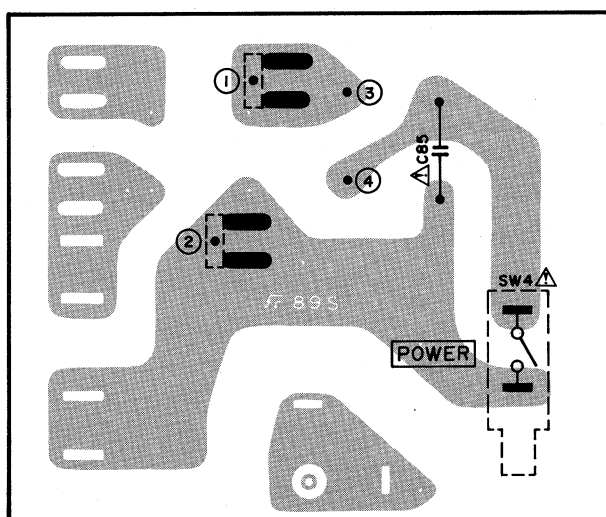


POWER SW PCB A3039A503C [V]

WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

4) AT-K1L POWER SW P.C BOARD A3039A504C [B, E]

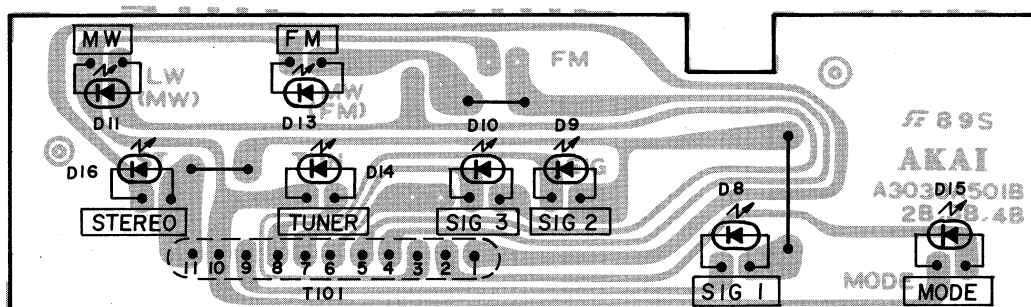


POWER SW PCB A3039A504C [B, E]

WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

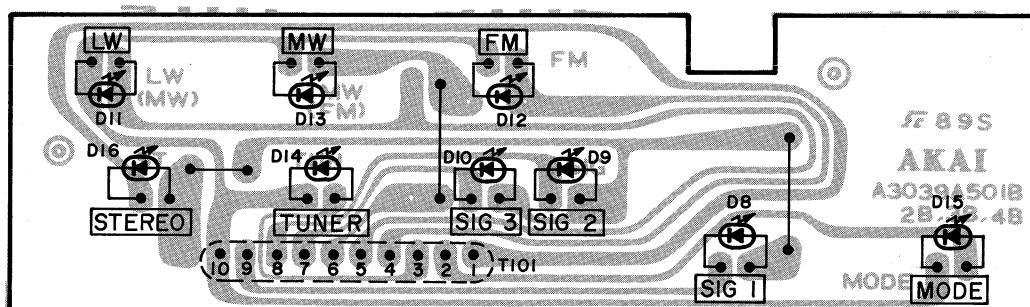
AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

5) AT-K1 FUNCTION P.C BOARD A3039A501B U, S , A3039A502B A, C , A3039A503B V , A3039A504B E



FUNCTION PCB A3039A501B U, S
 A3039A502B A, C
 A3039A503B V
 A3039A504B E

6) AT-K1L FUNCTION P.C BOARD A3039A504B B, E



FUNCTION PCB A3039A504B B, E

SECTION 2

PARTS LIST

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2. ASSEMBLY BLOCK	22
3. FINAL ASSEMBLY BLOCK	23
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Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

ATTENTION

1. When placing an order for parts, be sure to list the parts no., model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Parts List may be partially changed, please use this parts list for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List shows the parts that are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts". Select and order such parts from the "Common List for Service Parts".
2. The Recommended Spare Parts shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not be supplied in principle.

4. How to read list

a) Mechanism Block

b) P.C Board Block

2. HEAD BASE BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20x03STL CMT
2-4	ZS-536488	BID20x08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

SP (Service Parts) Classification

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

This number corresponds with the individual parts index number in that figure

This number corresponds with the Figure Number

6. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-IC3	EI-331661	IC SN7405N
6-IC4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

SP (Service Parts) Classification

This reference numbers corresponds with symbol numbers of Schematic Diagrams.

5. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List. It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you shock these Recommended Spare Parts Items.

NO.	PARTS NO.	DESCRIPTION
1	BT-345515	Δ TRANS POWER AT-K1-20 (C,A)
2	BT-345517	Δ TRANS POWER AT-K1-40 (E,V)
3	BT-345518	Δ TRANS POWER AT-K1-50 (S,B)
4	BT-345513	Δ TRANS POWER AT-K1-70 (U)
5	EC-337602	C S-FIX H CTZ51E127 4.5-20
6	EC-337603	C S-FIX H CTZ51F132 5.5-30
7	ED-345555	Δ D SILICON DBB10C 200/1.0A
8	ED-330218	Δ D ZENER H HZ15L 2
9	ED-337391	D LED GL5NG6 GRN
10	ED-345554	D LED SLP455B AMBER
11	ED-301911	D SILICON H DS448
12	ED-337575	D SILICON H GMA-01-4-BT T26
13	ED-345552	D VARACTOR 1S553T
14	EE-345556	VC AIR CR51J525
15	EF-695766	Δ FUSE SEMKO T 250V 0.31A (F1) (EXCEPT C,A)
16	EF-306088	Δ FUSE TSC 125V 0.31A (F1) (C,A)
17	EH-349002	FILTER CE CFM2-450BL 0.450MHZ
18	EH-345550	FILTER CE SFE10.7MS2G 10.700MHZ (EXCEPT V)
19	EH-349057	FILTER CE SFE10.7MS3G 10.700MHZ (V)
20	EI-347119	IC HA12016
21	EI-322248	IC LA1231N
22	EI-293185	IC LA1240
23	EI-345551	IC LB1403
24	EO-344425	COIL DET 2 77-1119-01
25	EO-344433	COIL DET 2 77-1120-01
26	EO-336934	COIL FIX 1 LAL03KH 2.20UH M
27	EO-337640	COIL IFT 119AC-15533X 10.7MHZ
28	EO-349001	COIL IFT 7MC-4718N 0.450MHZ
29	EO-202216	COIL IFT 7MC-6733C 460.0KHZ
30	EO-338409	COIL LF FKOB160MH02 250UH (V)
31	EO-345548	COIL OSC 2 7BRS-8724N 120UH
32	EO-345549	COIL OSC2 7NRS-8725N 570UH
33	EO-345547	COIL VARI 2 TEFI-OSC-U
34	EO-345545	COIL VARI 2 TEFI-RF-1
35	EO-345546	COIL VARI 2 TEFI-RF-2
36	EO-337598	COIL VARI 2 25A-1353-01
37	EO-350709	COIL VARI 2 25A-1733-03
38	ER-341654	FILTER LC LP 42W-1001
39	ES-337902	Δ SW PUSH SDLD1P 01-1
40	ES-348463	Δ SW SLIDE 00120297 01-2 (SW901)(U)
41	ES-345559	SW PUSH SUL191A 1-06-02S
42	ES-345560	SW PUSH SUL231A 2-THROW (EXCEPT L)
43	ES-345561	SW PUSH SUL331A 3-THROW (L)
44	ET-315410	TR FET 2SK61 Y
45	ET-322778	TR 2SA608K-NP E,F,G
46	ET-200505	TR 2SC2603 E,F
47	ET-336869	TR 2SC2999 C,D
48	ET-621235	TR 2SC536NP E,F,G
49	ET-618873	TR 2SC930 E,F
50	ET-328437	TR 2SD1012-V F,G
51	EV-337861	R S-FIX H RVF8P01 3P 302
52	EV-345784	R S-FIX H RVF8P01 3P 304

1. TUNER P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
1-1A	BA-A3039A020A	PC TUNER BLK AT-K1 (U)
1-1B	BA-A3039A020B	PC TUNER BLK AT-K1 (C) (C,A)
1-1C	BA-A3039A020C	PC TUNER BLK AT-K1 (E) (E,S)
1-1D	BA-A3039A020D	PC TUNER BLK AT-K1 (V)
1-1E	BA-A3039A020E	PC TUNER BLK AT-K1L (E) (B)
TUNER P.C BOARD		
1-IC1A	EI-322248	IC LA1231N
1-IC2A	EI-347119	IC HA12016
1-IC3A	EI-293185	IC LA1240
1-IC4A	EI-345551	IC LB1403
1-TR1A	ET-315410	TR FET 2SK61 Y
1-TR2A	ET-336869	TR 2SC2999 C,D
1-TR3A,4A	ET-618873	TR 2SC930 E,F
1-TR5Ato7A	ET-621235	TR 2SC536NP E,F,G
1-TR7A	ET-621235	TR 2SC536NP E,F,G
1-TR8A	ET-200505	TR 2SC2603 E,F (V)
1-TR9A,10A	ET-328437	TR 2SD1012-V F,G
1-TR11A	ET-322778	TR 2SA608K-NP E,F,G
1-TR12A	ET-307193	Δ TR 2SD612K D,E,F
1-D1A	ED-345552	D VARACTOR 1S5537
1-D2Ato5A	ED-337575	D SILICON H GMA-01-4-BT T26
1-D6A	ED-301911	D SILICON H DS448
1-D7A	ED-337575	D SILICON H GMA-01-4-BT T26
1-D17A	ED-330218	Δ D ZENER H HZ15L 2
1-D18A	ED-345555	Δ D SILICON DBB10C 200/1.0A
1-D20A,21A	ED-301911	D SILICON H DS448
1-D22A,23A	ED-337575	D SILICON H GMA-01-4-BT T26
1-SW1A	ES-345561	SW PUSH SUL331A 3-THROW (L)
1-SW2A	ES-345560	SW PUSH SUL231A 2-THROW (EXCEPT L)
1-SW3A	ES-345559	SW PUSH SUL191A 1-06-02S
1-VR1A	EV-337861	R S-FIX H RVF8P01 3P 302
1-VR2A	EV-345784	R S-FIX H RVF8P01 3P 304
1-L1A	EO-345545	COIL VARI 2 TEFI-RF-1 (EXCEPT V)
1-L1AV	EO-349348	COIL VARI 2 TEFI-RF-1A (V)
1-L2A	EO-345546	COIL VARI 2 TEFI-RF-2
1-L3A	EO-345547	COIL VARI 2 TEFI-OSC-U
1-L4A	EO-336934	COIL FIX 1 LAL03KH 2.20UH M
1-T1A	EO-337640	COIL IFT 119AC-15533X 10.7MHZ
1-T2A	EO-344425	COIL DET 2 77-1119-01
1-T3A	EO-344433	COIL DET 2 77-1120-01
1-T4A	EO-202216	COIL IFT 7MC-6733C 460.0KHZ
1-T5A	EO-349001	COIL IFT 7MC-4718N 0.450MHZ
1-T6A	EO-337598	COIL VARI 2 25A-1353-01
1-T7A	EO-350709	COIL VARI 2 25A-1733-03
1-T8A	EO-345549	COIL OSC2 7NRS-8725N 570UH
1-T9A	EO-345548	COIL OSC 2 7BRS-8724N 120UH
1-FL1AA	EH-345550	FILTER CE SFE10.7MS2G 10.700MHZ (EXCEPT V)
1-FL1AB	EH-349057	FILTER CE SFE10.7MS3G 10.700MHZ (V)
1-FL2AA	EH-345550	FILTER CE SFE10.7MS2G 10.700MHZ (EXCEPT V)
1-FL2AB	EH-349057	FILTER CE SFE10.7MS3G 10.700MHZ (V)
1-FL3A	ER-336830	FILTER LC LP BL-34HD (V)
1-FL4A	ER-341654	FILTER LC LP 42W-1001
1-FL5A	EH-349002	FILTER CE CFM2-450BL 0.450MHZ
1-VC1A	EE-345556	VC AIR CR51J525
1-TC1A	EC-337603	C S-FIX H CTZ51F132 5.5-30
1-TC2Ato4A	EC-337602	C S-FIX H CTZ51Z127 4.5-20 (L)
1-R41A	ER-324184	Δ R CB H S10 FS RDS 1/4W 121J (EXCEPT U)
1-R42A	ER-322591	Δ R CB H S10 FS RDS 1/4W 101J (V)
1-R47A	ER-322591	Δ R DB H S10 FS RDS 1/4W 101J
1-R64A	ER-322591	Δ R CB H S10 FS RDS 1/4W 101J

REF. NO.	PARTS NO.	DESCRIPTION
1-R69A	ER-327710	Δ R CB H S10 FS RDS 1/4W 151J
1-C39A	EC-306022	C STY V F05 CQ09S 821J 50DC
1-C41A	EC-306022	C STY V F05 CQ09S 821J 50DC
1-C43A	EC-317623	C STY V F05 500 102J 50DC
1-C72A	EC-334065	C STY V F05 CQ09S 161J 50DC (L)
1-C73A	EC-330541	C STY V F05 CQ09S 411J 50DC
1-TM1A	EJ-344423	TERMINAL W/SCREW YKD31-0133 P 2P

FUNCTION P.C BOARD

1-D8Bto16B	ED-337391	D LED GL5NG6 GRN
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POWER SW P.C BOARD

1-SW4C	ES-337902	Δ SW PUSH SDLD1P 01-1
1-L5C	EO-338409	COIL LF FKOB160MH02 250UH (V)

LED P.C BOARD

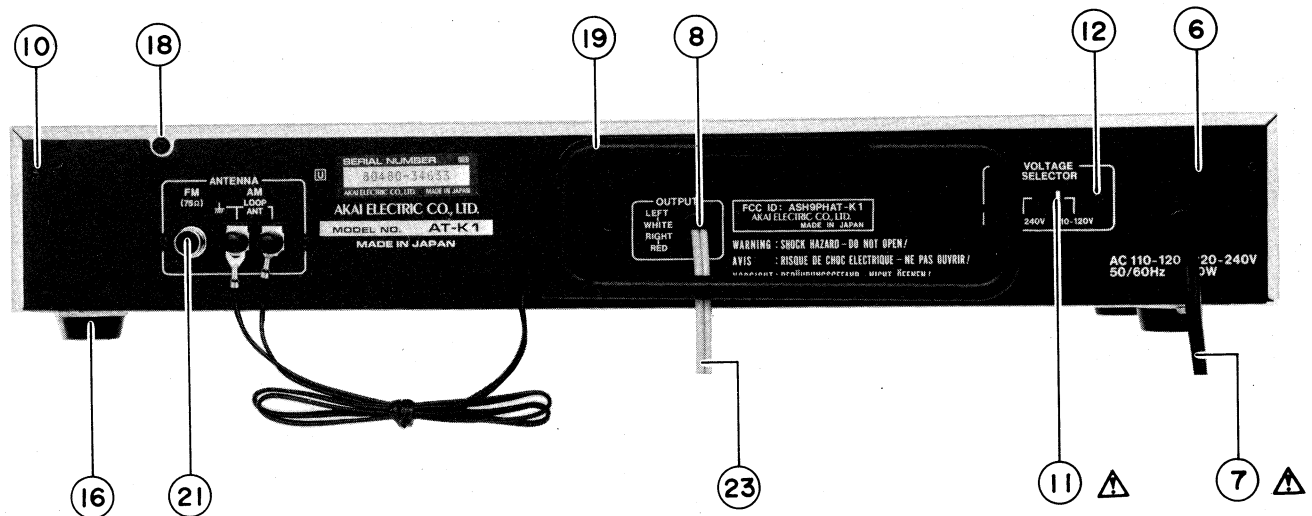
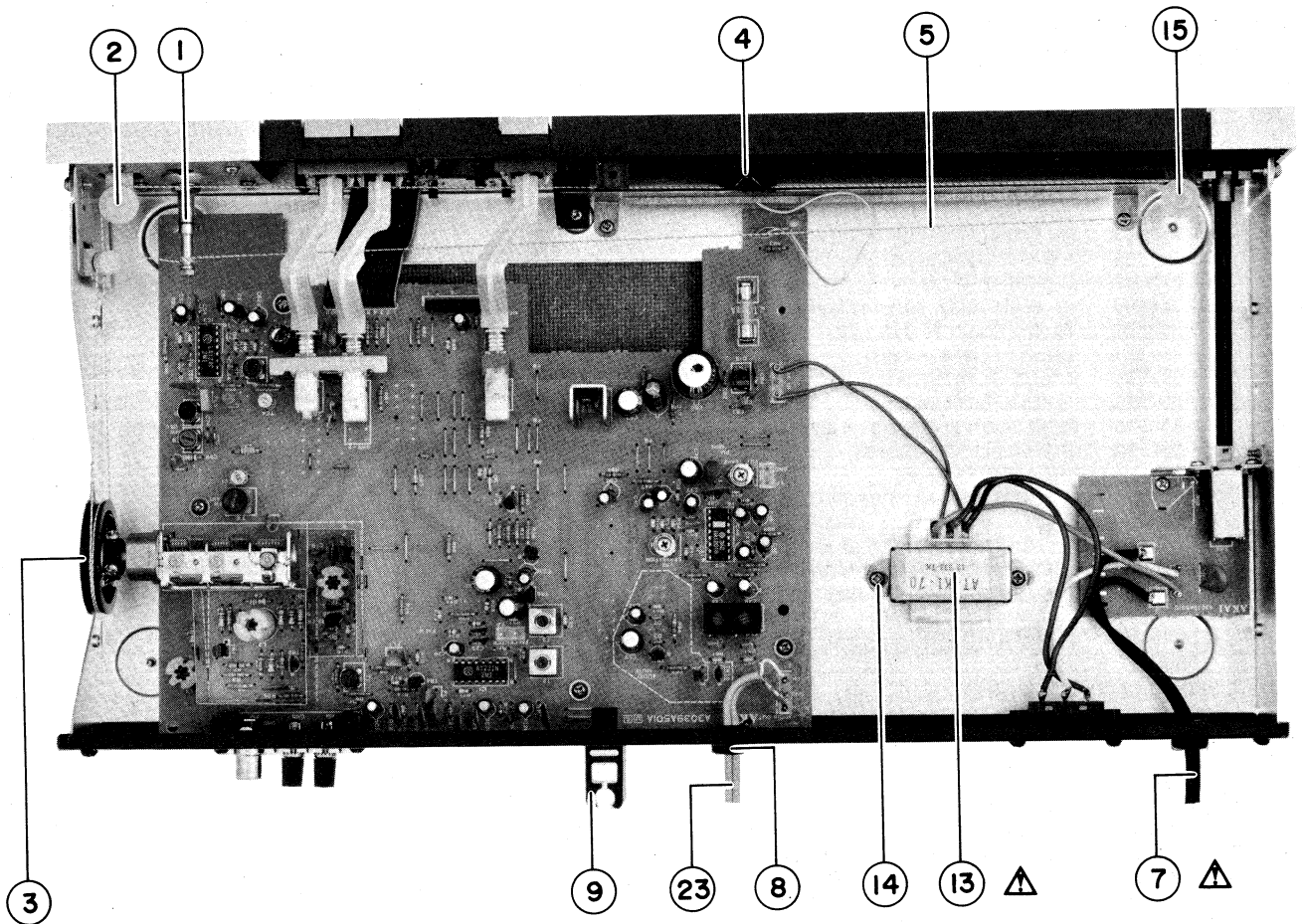
1-D19D	ED-345554	D LED SLP455B AMBER
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1-F1A	EF-306088	Δ FUSE TSC 125V 0.31A (C,A)
1-F1E	EF-695766	Δ FUSE SEMKO T 250V 0.31A (EXCEPT C,A)

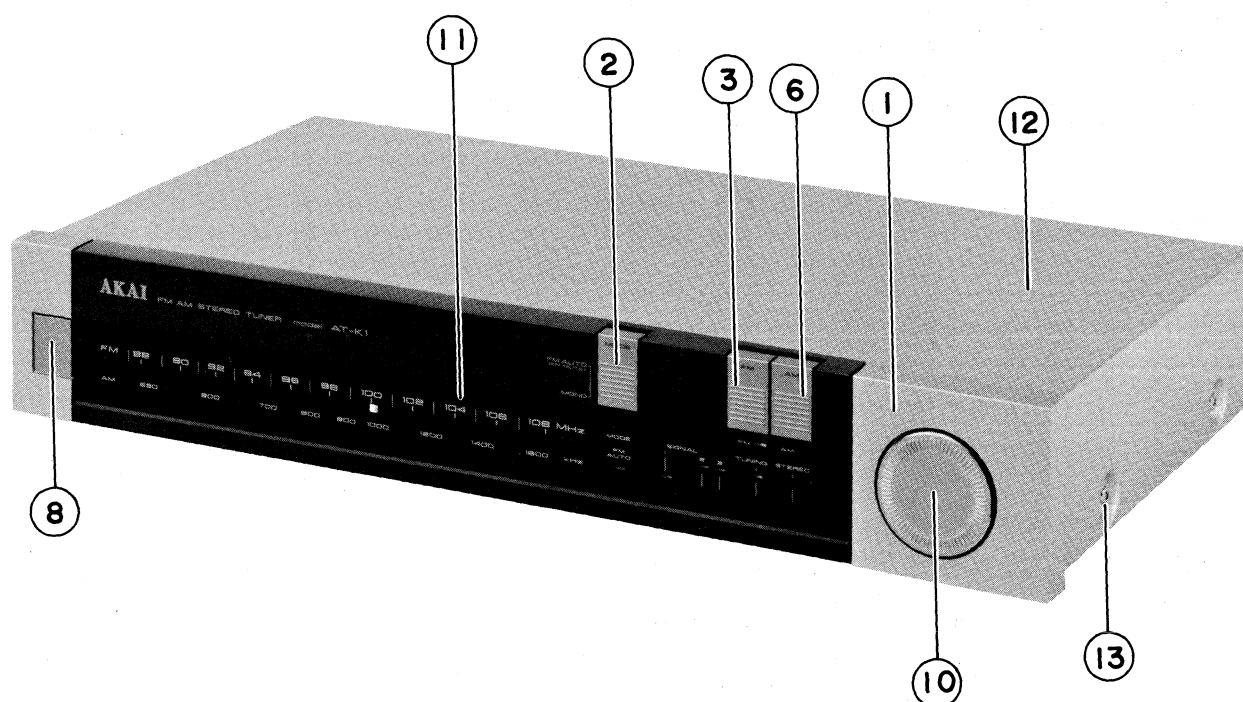
2. ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
TUNING WHEEL BLOCK		
2-1	TK-345519	SHAFT TUNING ASSY
2-2	MZ-307170	PULLEY
DIAL WHEEL BLOCK		
2-3	TA-322250	DIAL WHEEL ASSY
2-4	SE-345413	ESCUTCHEON LED
2-5	TA-307160	DIAL STRING TK-1064 D0.5
ASSEMBLY BLOCK		
2-6A	SP-345421A	PANEL REAR AT-K1 (U)
2-6B	SP-345421B	PANEL REAR AT-K1 (C,A)
2-6C	SP-345421C	PANEL REAR AT-K1 (E,V)
2-6D	SP-345421D	PANEL REAR AT-K1 (S)
2-6E	SP-345421E	PANEL REAR AT-K1L (E)
2-6F	SP-345421F	PANEL REAR AT-K1L (B)
2-7A	EW-306428	Δ AC CORD 2 CORES KP-205A, VFF U/T (U)
2-7B	EW-305691	Δ AC CORD 2 CORES KP-8, SPT-1 UC (C,A)
2-7C	EW-336923	Δ AC CORD 2 CORES KP-419C, LTCE-2F EV (E,V)
2-7D	EW-336924	Δ AC CORD 2 CORES KP-560, LTSA-2F S (S)
2-7E	EW-346249	Δ AC CORD 2 CORES LCFL2x0.75 B (B)
2-8	EZ-631945	STRAIN RELIEF SR-4N-4
2-9	SZ-332739	HOLDER ANTENNA
2-10	ZS-308846	T2BR30x08STL BZN PROJECTION
2-11	ES-348463	Δ SW SLIDE X012B11Y 01-2 (SW901) (U)
2-12	ZS-308846	T2BR30x08STL BZN PROJECTION (U)
2-13A	BT-345513	Δ TRANS POWER AT-K1-70 (U)
2-13B	BT-345515	Δ TRANS POWER AT-K1-20 (C,A)
2-13C	BT-345517	Δ TRANS POWER AT-K1-40 (E,V)
2-1D	BT-345518	Δ TRANS POWER AT-K1-50 (S,B)
2-14	ZS-345668	ST BID30x06STL CMT CUP
2-15	MZ-307170	PULLEY
2-16	SA-202118	FOOT
2-17x	ZS-498273	T2BR30x08STL CMT PW080
2-18	ZS-308846	T2BR30x08STL BZN PROJECTION
2-19	EE-337976	ANT LOOP LA-200A
2-20	EE-315329	ANT DIPOLE AFM-1B
2-21	EJ-315331	SOCKET COAX M UX-0014 (U,C,A) (L)
2-22x	ZW-305013	RV POP32 (A)
2-23x	EW-336758	CORD SAE-021 PINx2

ASSEMBLY BLOCK



FINAL ASSEMBLY BLOCK



3. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
3-1A	BD-345424A	PANEL FRONT AT-K1
3-1B	BD-345424B	PANEL FRONT AT-K1-P
3-1C	BD-345424C	PANEL FRONT AT-K1L
3-1D	BD-345424D	PANEL FRONT AT-K1L-P
3-1E	BD-345424E	PANEL FRONT AT-K1-S
3-1F	BD-345424F	PANEL FRONT AT-K1L-S
3-2A	SK-345385J	KNOB PUSH (E)
3-2B	SK-345385Q	KNOB PUSH (E)-P
3-3A	SK-345385K	KNOB PUSH (F)
3-3B	SK-345385R	KNOB PUSH (F)-P
3-4A	SK-345385L	KNOB PUSH (G) (L ONLY)
3-4B	SK-345385S	KNOB PUSH (G)-P (L ONLY)
3-5A	SK-345385M	KNOB PUSH (H) (L ONLY)
3-5B	SK-345385T	KNOB PUSH (H)-P (L ONLY)
3-6A	SK-345385P	KNOB PUSH (J)
3-6B	SK-345385U	KNOB PUSH (J)-P
3-7x	ZG-341458	SP PUSH MODE KNOB
3-8A	SK-342820D	KNOB POWER (3)
3-8B	SK-342820E	KNOB POWER (3)-P
3-9x	ZG-322189	SP (B)
3-10A	SK-345419	KNOB TUNING
3-10B	SK-345419B	KNOB TUNING-P
3-11A	SP-345422A	SCALE FRONT AT-K1
3-11B	SP-345422B	SCALE FRONT AT-K1L
3-12A	BC-341444C	COVER UPPER (B)
3-12B	BC-341444D	COVER UPPER (B)-P
3-13A	ZS-341959	ST BID40x06STL NI3
3-13B	ZS-341960	ST BID40x06STL BNI (P)

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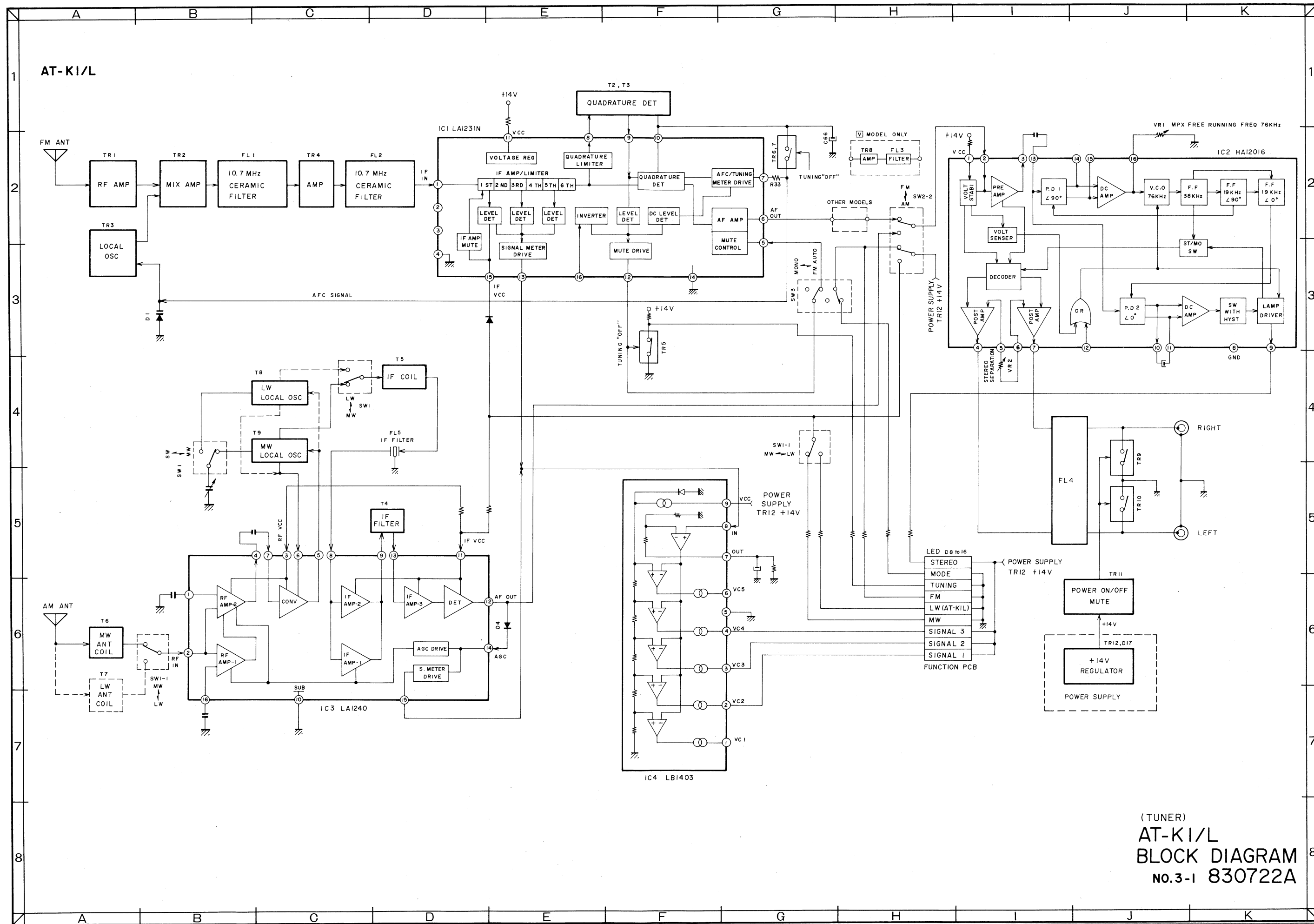
PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.
BA-A3039A020A	1-1A	ER-322591	1-R42A				
BA-A3039A020B	1-1B	ER-322591	1-R47A				
BA-A3039A020C	1-1C	ER-322591	1-R64A				
BA-A3039A020D	1-1D	ER-324184	1-R41A				
BA-A3039A020E	1-1E	ER-327710	1-R69A				
BC-341444C	3-12A	ER-336830	1-FL3A				
BC-341444D	3-12B	ER-341654	1-FL4A				
BD-345424A	3-1A	ES-337902	1-SW4C				
BD-345424B	3-1B	ES-345559	1-SW3A				
BD-345424C	3-1C	ES-345560	1-SW2A				
BD-345424D	3-1D	ES-345561	1-SW1A				
BD-345424E	3-1E	ES-348463	2-11				
BD-345424F	3-1F	ET-200505	1-TR8A				
BT-345513	2-13A	ET-307193	1-TR12A				
BT-345515	2-13B	ET-315410	1-TR1A				
BT-345517	2-13C	ET-322778	1-TR11A				
BT-345518	2-1D	ET-328437	1-TR9A				
EC-306022	1-C39A	ET-328437	1-TR10A				
EC-306022	1-C41A	ET-336869	1-TR2A				
EC-317623	1-C43A	ET-618873	1-TR3A				
EC-330541	1-C73A	ET-618873	1-TR4A				
EC-334065	1-C72A	ET-621235	1-TR7A				
EC-337602	1-TC3A	ET-621235	1-TR5A				
EC-337602	1-TC2A	ET-621235	1-TR6A				
EC-337602	1-TC4A	EV-337861	1-VR1A				
EC-337603	1-TC1A	EV-345784	1-VR2A				
ED-301911	1-D21A	EW-305691	2-7B				
ED-301911	1-D6A	EW-306428	2-7A				
ED-301911	1-D20A	EW-336758	2-23x				
ED-330218	1-D17A	EW-336923	2-7C				
ED-337391	1-D8B	EW-336924	2-7D				
ED-337391	1-D9B	EW-346249	2-7E				
ED-337391	1-D10B	EZ-631945	2-8				
ED-337391	1-D11B	MZ-307170	2-15				
ED-337391	1-D12B	MZ-307170	2-2				
ED-337391	1-D13B	SA-202118	2-16				
ED-337391	1-D14B	SE-345413	2-4				
ED-337391	1-D15B	SK-342820D	3-8A				
ED-337391	1-D16B	SK-342820E	3-8B				
ED-337575	1-D22A	SK-345385J	3-2A				
ED-337575	1-D23A	SK-345385K	3-3A				
ED-337575	1-D2A	SK-345385L	3-4A				
ED-337575	1-D4A	SK-345385M	3-5A				
ED-337575	1-D3A	SK-345385P	3-6A				
ED-337575	1-D5A	SK-345385Q	3-2B				
ED-337575	1-D7A	SK-345385R	3-3B				
ED-345552	1-D1A	SK-345385S	3-4B				
ED-345554	1-D19D	SK-345385T	3-5B				
ED-345555	1-D18A	SK-345385U	3-6B				
EE-315329	2-20	SK-345419	3-10A				
EE-337976	2-19	SK-345419B	3-10B				
EE-345556	1-VC1A	SP-345421A	2-6A				
EF-306088	1-F1A	SP-345421B	2-6B				
EF-695766	1-F1E	SP-345421C	2-6C				
EH-345550	1-FL1AA	SP-345421D	2-6D				
EH-345550	1-FL2AA	SP-345421E	2-6E				
EH-349002	1-FL5A	SP-345421F	2-6F				
EH-349057	1-FL1AB	SP-345422A	3-11A				
EH-349057	1-FL2AB	SP-345422B	3-11B				
EI-293185	1-IC3A	SZ-332739	2-9				
EI-322248	1-IC1A	TA-307160	2-5				
EI-345551	1-IC4A	TA-322250	2-3				
EI-347119	1-IC2A	TK-345519	2-1				
EJ-315331	2-21	ZG-322189	3-9x				
EJ-344423	1-TM1A	ZG-341458	3-7x				
EO-202216	1-T4A	ZS-308846	2-10				
EO-336934	1-L4A	ZS-308846	2-12				
EO-337598	1-T6A	ZS-308846	2-18				
EO-337640	1-T1A	ZS-341959	3-13A				
EO-338409	1-L5C	ZS-341960	3-13B				
EO-344425	1-T2A	ZS-345668	2-14				
EO-344433	1-T3A	ZS-498273	2-17x				
EO-345545	1-L1A	ZW-305013	2-22x				
EO-345546	1-L2A						
EO-345547	1-L3A						
EO-345548	1-T9A						
EO-345549	1-T8A						
EO-349001	1-T5A						
EO-349348	1-L1AV						
EO-350709	1-T2A						

SECTION 3

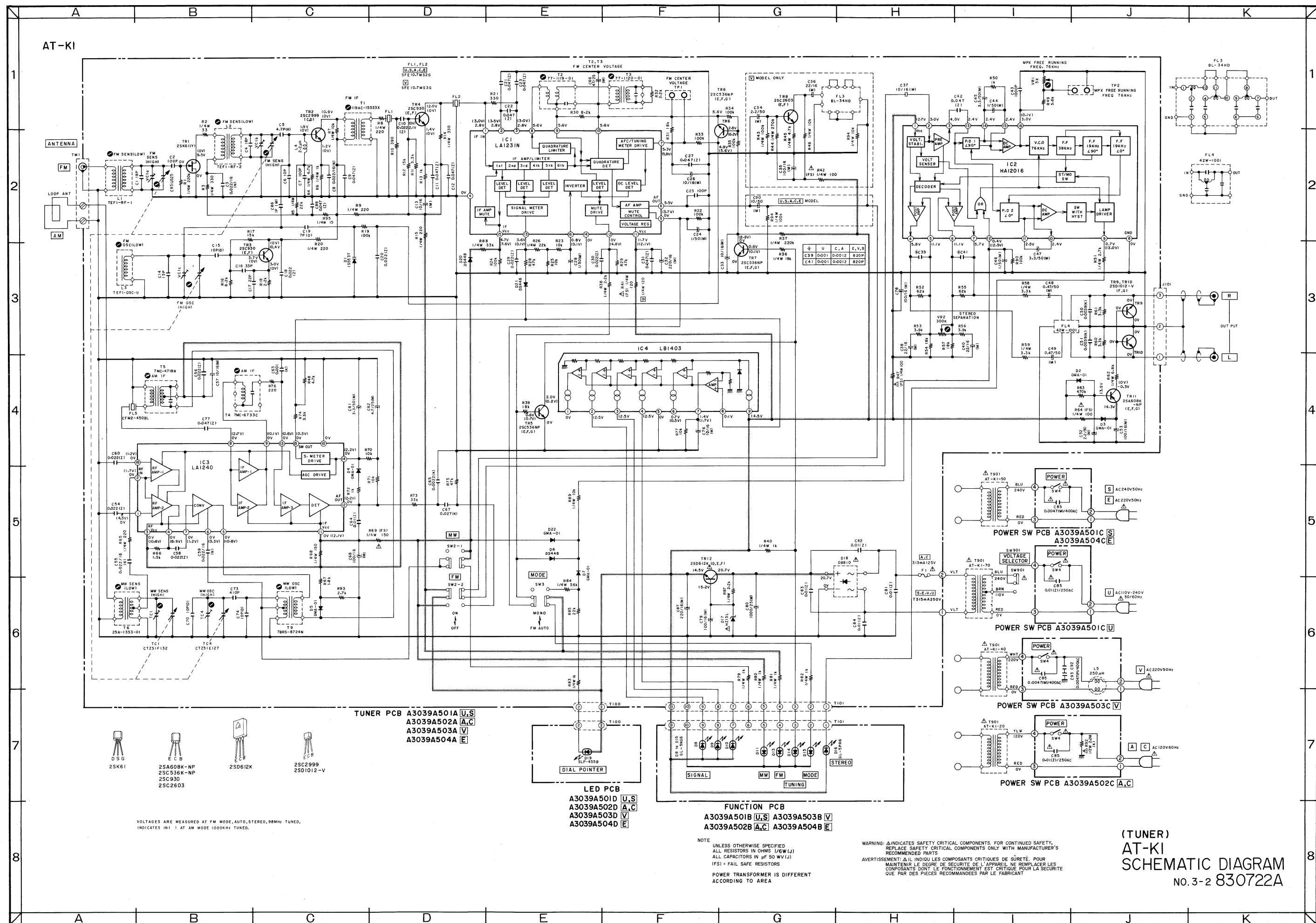
SCHEMATIC DIAGRAM

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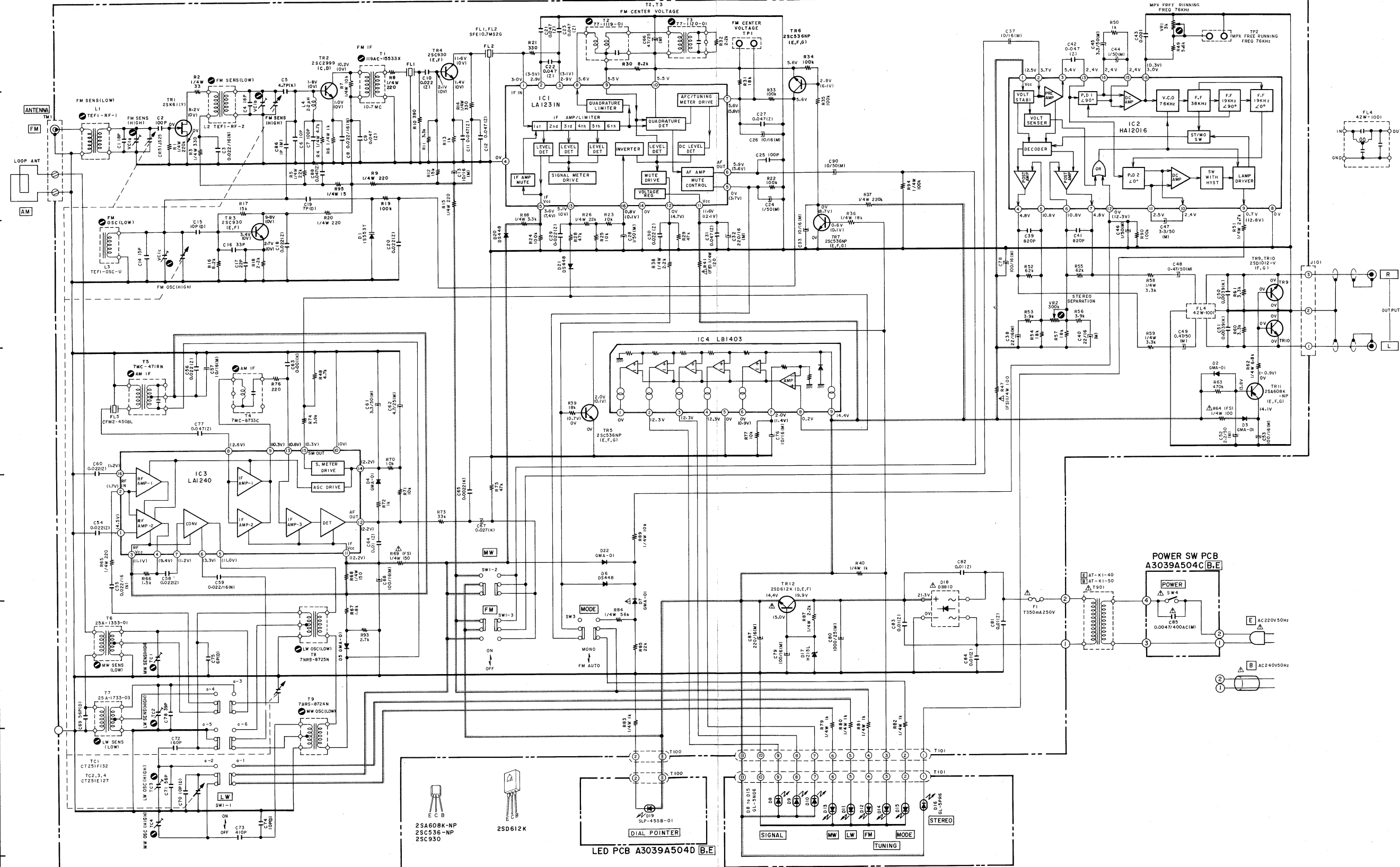
1. BLOCK DIAGRAM	26
2. AT-K1 SCHEMATIC DIAGRAM	27
3. AT-K1L SCHEMATIC DIAGRAM	28



(TUNER)
AT-K1/L
BLOCK DIAGRAM
 NO.3-1 830722A



AT-KIL



VOLTAGES ARE MEASURED AT FM MODE, FM AUTO, STEREO, 90MHZ TUNED
INDICATES IN () AT MW(1000KHZ), LW(40KHZ) MODE, TUNED.

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μ F 50 WV(J)
(FS) - FAIL SAFE RESISTORS
POWER TRANSFORMER IS DIFFERENT
ACCORDING TO AREA

WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS
AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SURETE. POUR
MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL, NE REMPLACER LES
COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE
QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

(TUNER)
AT-KIL
SCHEMATIC DIAGRAM
No.3-3 830723A